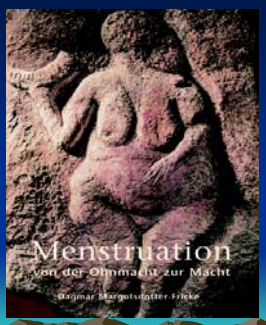
Menstrual Abnormalities

Jan Shepherd, M.D.

Objectives

- Define normal, abnormal, and dysfunctional uterine bleeding
- Describe office, laboratory, and additional evaluation of abnormal uterine bleeding
- Identify management options for acute and chronic abnormal uterine bleeding
- Define oligomenorrhea, primary amenorrhea, and secondary amenorrhea, and identify etiologies for each

Menstruation



The Normal Menstrual Period

- Blood loss < 80 cc (average 30-35 cc)
- Duration of flow 2-7 days (average 4 days)
- Cycle length 21 - 35 days (average 29 days)
- Mid-cycle spotting can occur with ovulation, but other bleeding between periods is abnormal

Abnormal Uterine Bleeding (AUB)

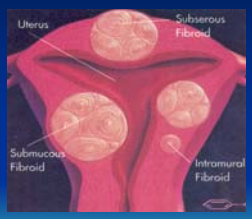
- Any change in menstrual period
  - Flow (menorrhagia)
  - Duration
  - Frequency (polymenorrhea)
  - Bleeding between cycles (metrorrhagia)
- 20 million office visits/year
- 25% of visits to women's health practitioners

Causes of Abnormal Uterine Bleeding

- Complications of Pregnancy
  - Miscarriage/Retained tissue
  - Ectopic pregnancy
  - Trophoblastic disease (e.g. molar pregnancy)
- Pelvic Pathology
  - Vaginal/Vulvar
  - Cervical – infection, polyp, dysplasia/Ca
  - Uterine – endometrial polyps, hyperplasia/Ca

Uterine Fibroids (Leiomyomata)

- Occur in 20 - 40% of reproductive-aged women
- Rule out other causes!
- Diagnosis based on physical exam
- Ultrasound for
  - Rule out submucous
  - Uncertain adnexal status
  - Worrisome interval growth



Coagulation Disorders

- Inherited coagulopathy is the cause of AUB in 18% of Caucasian and 7% of African-American women
- Most commonly presents in adolescence
- Von Willebrand's disease is the #1etiology
  - Occurs in ~1% of Caucasians
  - Order coagulation screen and Von Willebrand's factor (ristocetin cofactor assay) or PFA-100
  - Consider referral to hematologist

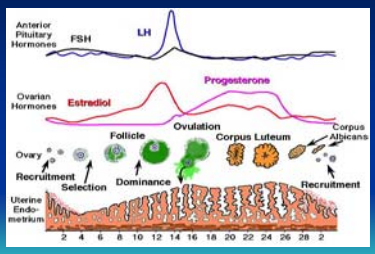
Common Medical Causes of AUB

- Endocrinopathies
  - Thyroid most common
- Systemic diseases
  - Blood dyscrasias (e.g. leukemia, ITP)
  - Liver or kidney disease
- Medications
  - Hormones, including contraception, HRT, corticosteroids
  - Psychotropic drugs
  - Anticoagulants
  - Herbs and botanicals – esp. soy, ginseng, ginkgo

Dysfunctional Uterine Bleeding (DUB)

- No anatomic, systemic or iatrogenic cause
- Presumed disruption in normal ovarian function
  - Usually anovulation
  - Can be due to luteal phase defect
- Continuous estrogen exposure causes excessive endometrial proliferation; no progesterone to control and stabilize this growth
- Unopposed estrogen can lead to endometrial Ca

The Normal Menstrual Cycle

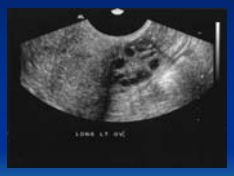


Common Etiologies for DUB

- Perimenarche or perimenopause
- Obesity
- Stress (emotional or physical)
- Other hormone imbalance (esp. PCOS)

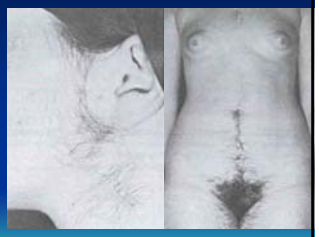
Polycystic Ovarian Syndrome (PCOS)

- Most common endocrinopathy in reproductive-age women
- 35% of adult anovulation
- Classic triad
  - Chronic anovulation
    - Oligo/Amenorrhea
    - Infertility
  - Hirsutism (~70%)
  - Obesity (~60%)
    - Now known to be 2º insulin resistance (30-100%)



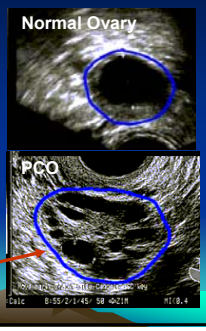
PCOS

- ☐ PCOS pts have a genetic pituitary hypersensitivity to GnRH, which results in increased LH secretion and decreased FSH
- ☐ Increased LH drives androgen production by follicles
- ☐ Results in hirsutism and acne
- ☐ Androgens are converted to estrogen in fat tissue → ↑ risk of endometrial Ca



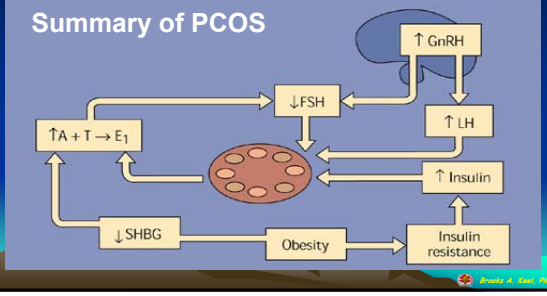
PCOS

- Decreased FSH is not enough to sustain follicular maturation → follicles become arrested.
- Because FSH is not totally depressed, new follicular growth occurs, but is not to the point of full maturation and ovulation. Multiple cysts result (polycystic ovaries).



Female Infertility
PCOS

Summary of PCOS



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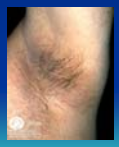
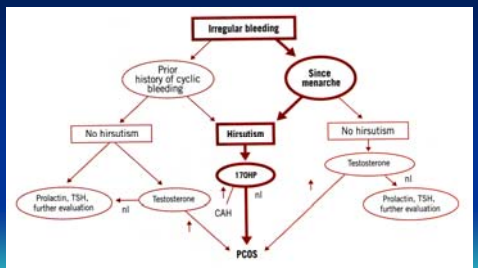
Evaluation for PCOS

- History
  - Perimenarchal onset
  - Gradual rate of progression
  - Status of menstrual cycles
- Physical Exam
  - Signs of hyperandrogenism
  - Acanthosis nigricans



PCOS: A Clinical Diagnosis



Guzick D. Obstet Gynecol 2004;103:181-93.

Optional Tests

- LH, FSH
  - LH/FSH > 2 is consistent with PCO
- Pelvic ultrasound
  - ≥ 12 follicles measuring 2-9 mm
- Testosterone
  - > 200 = androgen-producing tumor
- DHEAS
  - > 700 = adrenal pathology

Summary: Checklist for Making the Diagnosis in AUB

Important Elements in History of AUB

- Onset
  - Gradual vs. sudden
  - Perimenarche, perimenopause
  - Temporal associations (postcoital, postpill, postpartum)
- Characteristics
  - Volume
  - Duration
- Is she ovulating?
  - Regularity? Variability?
  - Menstrual cramps? PMS?
  - History of infertility

Associated Systems

- Systemic symptoms
  - Weight gain or loss
  - Fatigue, N&V
  - Fever
- Symptoms of endocrinopathy
  - Androgen Excess
  - Thyroid
  - Pituitary
- Symptoms of coagulopathy

Additional Focused History

- Gynecologic history
  - Pap tests and annual exams
  - Past pelvic surgeries or problems
- Past Medical History
  - Medical illnesses
  - Surgeries
  - Medications
- Family History
  - Menstrual Abnormalities
  - Coagulopathies
  - Gynecologic cancers

Checklist for Physical Exam for AUB

- Bruising, petechiae
- Low or high BMI
- Hirsutism or acne (Hyperandrogenism)
- Acanthosis nigricans
- Enlarged thyroid or thyroid nodule
- Galactorrhea
- Complete pelvic exam

Checklist for Laboratory Evaluation of AUB

- **Rule Out Pregnancy**
- CBC
- TSH
- Coagulation profile if indicated (esp teenager)
- Chem screen if indicated
- 17OHP, Testosterone, and DHEAS if indicated

Additional Testing

- If you suspect DUB → Endometrial Biopsy
  - ≥ 35 years old
  - obese, diabetic, hypertensive
  - PCOS
- If patient is ovulating
  - Transvaginal Ultrasonography
    +/- saline infusion
- Hysteroscopy with directed biopsy

Management of AUB

Management of Acute AUB/DUB

- Can be a life-threatening emergency
  - Monitor Vital signs
  - IV fluids
  - Type and Crossmatch
- IV Estrogen - 25 mg q 4-6 hrs x 24
- IM Progesterone – 100 mg
- OCP or Norethindrone acetate 5 mg tid x 7, tapering to qd x 3 weeks

Management of Chronic AUB/DUB

- General Health Measures
  - weight control
  - stress reduction
  - iron supplements
- NSAIDS (Antiprostaglandins)
- Progestins (control bleeding & prevent endometrial Ca)
  - oral contraceptives, if not contraindicated
  - progestin-only contraception
  - levonorgestrel IUD
  - cyclic progestins (Aygestin or Provera days 14-26)
- Endometrial Ablation

Adolescent

- Pregnancy test!
- Rule out coagulation disorder
  - Order coagulation screen and Von Willebrand's factor (ristocetin cofactor assay) or PFA-100
- OCP or Norethindrone acetate 5 mg tid x 7, tapering to qd x 3 weeks
- Consider maintenance OCP

Perimenopausal Woman

- Pregnancy test!
- Consider endometrial biopsy
- Norethindrone acetate 5 mg tid x 7, tapering to qd x 3 weeks
- Consider maintenance OCP, if not contraindicated
- Consider Mirena IUC

COCPs for Perimenopause

- Benefits
  - Symptom relief
  - Regulation of menses
  - Maintenance of bone density
- Risks
  - Safe for nonsmokers with no CV risk factors
  - Incidence of VTE increases at age 40
    - Exercise caution with high risk, e.g. obesity

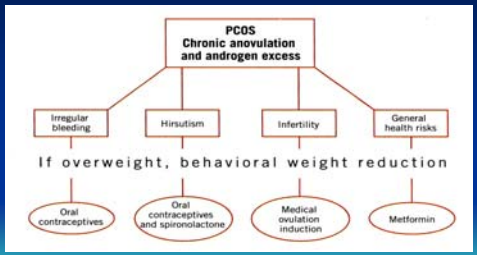
IUCs for Perimenopausal Women

- Among perimenopausal women who are bleeding normally or less frequently, either the Copper T 380A IUD or the levonorgestrel-releasing IUD is acceptable
- Among women who are bleeding abnormally
  - Preinsertion endometrial evaluation is recommended
  - If no intrauterine pathology, hormone-releasing IUDs may help control bleeding and prevent endometrial hyperplasia

Innovative Management of Fibroids

- Medical
  - GnRH agonists/antagonists
  - Aromatase inhibitors (anastrozole, letrozole)
  - Anti-progesterone (mifepristone)
- Interventional
  - Endometrial Ablation
  - Endoscopic myomectomy
    - Hysteroscopy
    - Laparoscopy
  - Radiologic management
    - Uterine artery embolization
    - MRI-guided focused ultrasound (ExAblate)

Management of PCOS



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Definitions

- Primary Amenorrhea – no spontaneous uterine bleeding by the age of 16
- Secondary Amenorrhea – absence of menses for 6 months or more
- Oligomenorrhea – menstrual cycle > 35 days

Causes of Primary Amenorrhea

- Hypothalamic/Pituitary
  - Constitutional
  - Systemic Illness
  - Extreme physical, nutritional, or emotional stress
  - PCOS
- Ovarian
  - Gonadal dysgenesis (esp Turner's Syndrome)
- Anatomic
  - Mullerian anamolies or agenesis (e.g. absent vagina)
  - Imperforate hymen

Causes of Secondary Amenorrhea

- Pregnancy or Breast-Feeding
- Hypothalamic
  - Extreme physical, emotional, or nutritional stress
  - Systemic illness
  - PCOS
- Pituitary
  - Hyperprolactinemia
- Ovarian
  - Premature ovarian failure
- Uterine
  - Iatrogenic

Evaluation of Amenorrhea/Oligomenorrhea

- **Rule Out Pregnancy**
- Complete H and P with focus on Weight, Hirsutism, Galactorrhea
- TSH, Prolactin
- FSH, LH
- Testosterone, DHEAS (if indicated)

* Treat based on etiology

Period – a Girl's Guide